THE JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION

PUBLISHED MONTHLY

Volume XI St. Augustine and Jacksonville, Florida, September, 1924 Number 3

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ORIGINAL ARTICLES

THE FULL-TIME HEALTH OFFICER

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The full meaning of good health, or that state of well-being which makes life worth while, is rarely ever adequately appreciated until something deprives us of it—accident, injury, unavoidable causes or, what is more common, disease.

Other considerations being equal, disease, loss from fire or theft, and crime are prone to develop in proportion to the number of people living in limited areas. In cities with the close contact of buildings and the universal use of electricity, more danger from fire is anticipated than in the outlying sections. Recognizing this simple fact, there is always an appropriation for the maintenance of a fire department in a city's annual budget.

In cities where one's identity may be submerged in the masses, where opportunity presents for crimes of various sorts, and where hiding places of easy access abound, there is always found an underworld and a criminal class. In recognition of these conditions and for the public safety in general, appropriations are made annually in civic administration for the maintenance of a police department.

In cities with the continual intermingling of people in street cars, in stores, in schools and colleges, theatres or moving picture houses, and in offices, conditions are created favorable to the spread of contagious disease. Housing problems contribute to a large extent in fostering tuberculosis, while milk and such farm products as are consumed raw may well be the medium of spreading the diseases of soil and water pollution, of which typhoid fever is a notable example.

There does not seem to be, however, the same feeling of concern regarding the saving of human life as there is in means to protect property against fire and theft, perhaps because the possibilities are not so obvious and not so well understood. It is often difficult to obtain sufficient funds to maintain an adequate full-time health department with a full-time health officer in charge of the work. It is common to find, even in cities of 10,000 and over, health departments with a part-time physician in charge, who undertakes to administer the health department and engage in general practice as well—two incompatible duties.

The United States Public Health Service, requesting information from 745 cities of a population of 10,000 and over, learned that only 394 or 52 per cent had full-time health departments. The remaining 48 per cent either had no health department or had part-time organizations only. It may thus be seen that there are many hundreds of thousands of people who are not enjoying the right of adequate protection.

Health officers are conspicuous by their absence. The county health officer is the best return on an investment that a county can make, yet in a recent publication the United States Public Health Service pointed out that in the 2,850 counties in this country, representing 51,406,017 people, only 5,957,616 rural inhabitants were supporting full-time health organizations. In other words, over 89 per cent of the people in our rural districts are not protected by a full-time health service.

The money for full-time health service comes from the general fund; the general fund is derived from revenues, principally taxation; the people pay the taxes and have a voice in saying how the money shall be spent.

Popular demand creates full-time health departments and this demand popularizes clean, safe milk for babies, better health care of children in school, the protection of households from epidemic diseases, the regulation of the sale of clean foodstuffs and beverages, the safeguarding of water supplies, the distribution of vaccine and antitoxin and many other things which contribute to a better state of health and consequently a happier existence.

We feel secure in knowing that there is a department nearby to protect us and our homes

from fire. How many are equally interested in a department to put out the epidemic fires which can spread so quickly, and can one feel secure if the community does not support such a department?

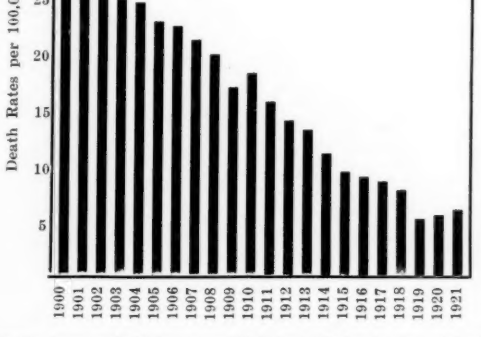
The Health Department not only acts in times of stress and emergency but is constantly alert to prevent just such occurrences. From the time one is born, throughout childhood and manhood or womanhood, even until death terminates one's career, which should be late in life, the Health Department is in more or less contact with one's daily life—safeguarding the milk, water and food supply, exercising quarantine when necessary, providing or assisting in the provision of baby welfare clinics, child hygiene operations and school inspections, sponsoring public health nursing, advocating sanitary sewer systems and safe methods of garbage disposal, preaching public health and many other important things which are little known or, if known, are too little appreciated.

To the citizen we may say: If you have a Health Department as an integral part of your city or county government, get better acquainted with it. If you find that it is only part-time, think what you would do and how you would act if you had only a part-time fire or police department and do as much to strengthen the agency that protects your life as you would in advocating proper protection against fire and robbery.

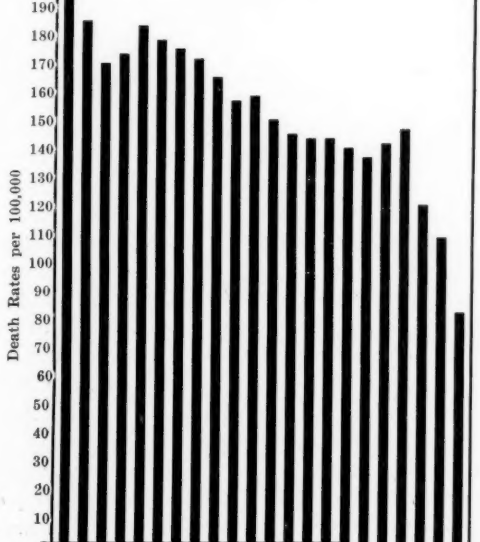
Full-time health departments are always good investments in advertising the community. The prosperity of each city and each rural section depends on the type of citizenship supporting it and a promise of good health insurance will, or should be, a big factor in decisions as to what constitutes a good place in which to live.

Remember that good health is in great measure purchasable, and support the expenditure of public money, which is your money, to promote adequate full-time local health departments to protect you and your family in particular, and to promote the welfare of your community in general.

To the physician we may say that duty demands that he should ever be ready to assist his State or local government in the work of preventing disease. There is no profession in the world so actively engaged in striving to remedy and remove the conditions which called it into existence as is the medical profession. The fact that this is not appreciated, indeed not at all believed, by many uninformed people, does not deter the conscientious physician from continuing to render humanitarian service in the prevention of disease. Full well he knows that with our rapidly increasing transportation and our likewise rapidly increasing population, the dangers from communicable diseases are correspondingly multiplied. There is no question but that if our present safeguards of health were suddenly removed, our large centers of popula-



Deaths from typhoid fever per 100,000 population in the original registration States, 1900 to 1921, inclusive.



Deaths from tuberculosis per 100,000 population in the original registration States, 1900 to 1921, inclusive

tion would speedily become veritable holocausts of suffering and death.

Let us emphasize then the necessity of the full-time, adequately paid health officer. In doing so I shall close this paper by referring to two charts reproduced here, taken from the annual report of the Surgeon General of the Public Health Service. These charts illustrate in a very striking manner the success of the battle against two of our infectious diseases, namely, typhoid fever and tuberculosis, during the past two decades.

THE USE OF DIPHTHERIA TOXIN-ANTITOXIN AND ANTITOXIN IN THE PREVENTION AND TREATMENT OF DIPHTHERIA

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All physicians recognize that antitoxin is the one reliable remedy in diphtheria. The majority of the people also, in a general way, believe in antitoxin. The difficulty is that the people absolutely, and the physicians to some extent, do not realize the importance of giving antitoxin early and in sufficient amount.

Dr. Roberts, in 1922, studied five hundred fatal cases of diphtheria which occurred in New York State in the portions outside of New York City. Only six per cent of the cases that resulted in the five hundred deaths were treated with antitoxin on the first day and in none of these was a sufficient dose given. The results of these investigations impress the importance of both physicians and the laity realizing the necessity of giving antitoxin early in cases of diphtheria. In any case in which a physician on his first examination thinks the case would be dangerous, if it were diphtheria, antitoxin should be given before waiting for a culture. It is certainly far better to give antitoxin unnecessarily with possibly the development of a serum rash, than to delay for a certain diagnosis and then give it possibly too late. The private physician as well as the Health Department official must see to it that the people in general realize that a case of suspected diphtheria should be reported at once. If the suspicion seems justified the physician should give a dose of antitoxin. In most parts of the country physicians realize that antitoxin should be given as a single and sufficient dose. The antitoxin after being injected remains in the body for from one to three weeks, being gradually dissipated. As the use of antitoxin is to neutralize the antitoxin it is evident that there is no reason to divide the amount to be given into several doses. It is true that improvement seems to follow the second or third dose, but that is because it requires a certain amount of time for improvement to begin, and if the antitoxin is given in a single dose the improvement will be greater and more rapid than if the amount had been divided. In serious cases antitoxin should be given intravenously. In this way the delay which takes place because of slow absorption when it is injected into the muscles is avoided and the full amount of antitoxin immediately circulates throughout the body and begins at once to pass slowly out the capillaries. Dr. Roberts found in his analysis that quite a number of deaths happened because the patients were not kept in bed long enough to provide against the danger of cardiac failure.

The Use of Antitoxin as a Preventive

Some physicians seem to think that because we have toxin-antitoxin to immunize that antitoxin is no longer needed for this purpose. This is far from being the case. In any case of a young child where exposure has occurred to an actual case of diphtheria a dose of five hundred to one thousand units of antitoxin is indicated. This will give protection for at least two weeks. It is true that this injection of horse serum sensitizes the children to later injections, but the danger is very slight indeed of this sensitization being sufficient to have serious practical importance. If one knew that a child had received an immunizing injection one would be very cautious in giving an intravenous injection of serum, but if the necessity was great one would not hesitate.

The Use of Toxin-Antitoxin

This has now been employed in New York City for a period of ten years and more than three hundred thousand children have been injected and not a single accident has happened. Until recently the Schick test was done in the older children and those that showed a positive reaction were immunized, while in the younger children three injections of toxin-antitoxin were given without the Schick test. The results have been that about 90 per cent of the nonimmune children became immune some three to six months after receiving the three injections.

For a year we have been using the toxin-antitoxin at the same time both as an immunizing agent and a modified Schick test. If the toxin-

antitoxin is of standard strength and one c.c. is injected strictly subcutaneously in the anterior part of the arm there will develop a reaction similar to but a little larger than the Schick reaction in all children who are not immune. In addition to this about five or ten per cent of the children will show a reaction because of the protein substances in the antitoxin. In little children the Schick test and subcutaneous toxin-antitoxin injections give practically the same results. The test should be read on the fifth or sixth day, otherwise too many pseudo-reactions will be noted. The use of toxin-antitoxin is easy and loses one injection if it replaces the Schick test.

The Toxin-Antitoxin Preparation

The old standard toxin-antitoxin mixture which contained three L+ doses of toxin with a suitable amount of antitoxin has been almost entirely replaced with our new preparation of one-tenth L+. The immunizing results are equally good, as is shown in the following table:

Amount of Original Toxin in 1 C.c. of Mixture	*Number of Children Receiving 3 Injections*	*Per Cent of Nonimmunes Shown to Be Immune on Schick Retest Four Months Later*
0.1 L+* (4 lethal doses)	490	90
0.5 L+ (20 lethal doses)	304	95
3.0 L+ (120 lethal doses)	318	92
5.0 L+ (200 lethal doses)	487	85

*The mixture is made by adding three-fourths unit of antitoxin to one L plus dose of toxin. The toxin and antitoxin should be diluted in cold water and the two solutions mixed immediately. If the toxin is diluted in water at room temperature, it deteriorates rapidly.

The fact that it contains only one-thirtieth of the protein substances caused it to produce much less local reactions. With this new preparation only about fifty per cent of the children show any local reaction. A comparison between the different preparations is shown in the following table:

	*New Preparation 0.1 L Plus** %	*Old Preparation 3 to 5 L Plus* %
No local reaction	25	0
Slight local reaction	64	41
Moderate local reaction	11	37
Marked local reaction	0	22
Among those showing marked reactions there was a rise of temperature of from 1 to 3 degrees F., and other constitutional symptoms in	0	6

*If the 0.1 L plus preparation is underneutralized more than the amount advised, there will be a local reaction from the excess of toxin.

About two years ago Hooker, of Boston, showed that the injection of toxin-antitoxin caused a certain amount of sensitization and he suggested that goat serum antitoxin instead of horse serum antitoxin should be used. Personally I do not think the objection is a serious one, but it certainly has influenced a number of physicians to withhold the toxin-antitoxin. There is absolutely no reason why goat antitoxin should not be used and we have already prepared such a mixture and in time we will probably introduce it instead of the horse serum antitoxin. Another method of avoiding this possible objection is to act on toxin with formalin and so form a toxoid. We have used the toxoid in several thousand children and it may be possible to so standardize this as to use the formalin instead of the antitoxin to lessen the toxicity of the toxin while still leaving its immunizing property.

What Have the Results Been in New York City and in New York State?

Last year the mortality from diphtheria in both the city and State was less than one-half of what it was five years ago when we began this work, and the same is true for other places. The statistics for the city are seen in the following table:

Diphtheria; Incidence and Mortality, 1919-23.

Year	*Cases*	*Deaths*
1919	14,014	1,239
1920	14,166	1,045
1921	15,110	891
1922	10,427	874
1923	8,050	547

It is recognized that all this improvement cannot be due to the antitoxin injections. The Health Department has tested and treated some five hundred thousand school children and some fifty thousand children of preschool age. We do not know how many little children have been injected by private physicians. What we know is that every school child has taken home a circular to its parents requesting that the child be immunized and also speaking of diphtheria antitoxin. We know that about one-half of the school children have been immunized and that this certainly blocks the passage of infection from one home to another. We know that more families know more about diphtheria because of these circulars and because of the decision that the parents had to make. It is, therefore, the combining effect of the immunizing doses by the Health Department medical inspectors and by private physicians together with the general education of the people of the city and State of New York that has brought about this striking reduction in morbidity and mortality. We have the means of ridding the community of diphtheria. It depends whether we can bring the people to accept these means and whether the Health Department and the private physicians think it worth the cost and trouble to carry out immunization. As to antitoxin I am sure all are agreed that we must impress on the people the importance of its prompt use.

FLORIDA'S LEPROSY PROBLEM

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It may come as a surprise to many physicians in the State to learn that Florida has a leprosy problem. There is nothing about this situation which need alarm us nor give special concern to the health authorities, but it does require careful and intelligent handling, and, as is true of so much of our public health work, satisfactory progress will be made only after the sympathetic support of the medical profession has been secured.

A survey made four years ago jointly by Dr. B. L. Arms, Director of the Bureau of Diagnostic Laboratories of the State Health Department, and the writer, showed a total of about twelve known lepers in the State. If the experiences of other places may be applied to Florida there were at that time at least as many cases not known to the Health Officers as the number I have given—in other words, in communities in which leprosy is found, for every known leper there will be one who has not come to the attention of a physician who diagnoses the diseases, therefore the case is not recognized and not reported to the health authorities.

Leprosy is but little infectious and the risk of conveying it from one person to another is comparatively small; this is due in part, at least, to the fact that most of us present a very considerable degree of resistance to this infection, as we do to most infectious diseases. Even when opportunity for the transmission of the disease is as good as it seems likely to make it, that is, when people live in the marital relation, not more than about 5 per cent contract leprosy.

The significant fact about leprosy in Florida is that a great majority of cases unquestionably originate in the State; thus, considerably more than one-half of the cases found when the survey was made several years ago had never been out of Florida. It is, of course, widely known that from the point of view of the epidemiology of leprosy this country may be divided into two parts; one part embraces, roughly, the States bordering on the Gulf, in which area leprosy is communicable from person to person; the other part embraces practically all the remainder of the country; in the latter area leprosy shows no tendency to spread. An example will aid in clarifying this statement. In Louisiana, which has the largest number of lepers of any State in the Union, the disease appears to be pretty freely transmissible, nearly all the cases in that State being natives thereof and having acquired the infection within the State; on the other hand, in our northern communities leprosy shows no tendency whatever to spread. Many imported lepers have been domiciled in the larger cities and some in the country districts but, practically speaking, no extension has occurred. From the point of view of public health, leprosy may be ignored in the northern States while in the Gulf States every case of leprosy is a potential source of danger to the community.

It seems unnecessary to discuss the symptoms of leprosy since any text-book will give a satisfactory picture of the disease.

Diagnosis: With respect to diagnosis it is perhaps safe to say the difficulty is not that the physician does not recognize the disease once his attention has been directed to the possibility of the presence of leprosy, but rather that the possibility does not occur to him. The advanced, well-marked case is readily recognized, even by the layman; however, the very early case and the very mild case may be extremely difficult to recognize. It is in cases of this kind that laboratory diagnosis is helpful. A smear preparation made from a skin lesion or from the scrapings of a nasal ulcer or from the nasal mucosa will often show acid-fast bacilli in such number and of such shape and arrangement as to practically exclude anything other than leprosy.

Perhaps a word of warning should be given concerning the examination of smears from the nasal cavities; acid-fasts are found in many conditions, even in apparently normal individuals; they are usually atypical in shape and few in number; however unless quite characteristic, they should never be made the basis of a diagnosis of leprosy.

Treatment: The treatment of leprosy is of course unsatisfactory. As in other prolonged diseases the hygiene of the surroundings and of the patient must be looked to and an abundance of suitable food must be provided.

We are without any specific medication which is of value in all cases. The therapeutic stand-by is the oil of chaulmoogra or one of its derivatives; within recent years there has again come into popularity the use of the ethyl esters of the

acids found in the oil mentioned. The sodium salts of the same acids have also been used, and in each case those who have had much experience believe that results are to be attained which are much superior to those secured when the crude oil is used.

Prophylaxis: There is just one thing to be said here and that is that the leper should be removed from the possibility of association with people; to all intents and purposes this means isolation in a special colony. Such a place is now available and is known as U. S. Public Health Service Hospital No. 66, at Carville, Louisiana.

THE PROBLEM OF THE CRIPPLED CHILD

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When we think of the objects underlying the organization and perpetuation of the Public Health Department of a great State like ours, we like to think that it is a true indication of the desire of those of us who are able to contribute the necessary financial support of the government, to take care of our less fortunate brothers just a little better than we do ourselves. I am thinking now of a young army of crippled children, whose outlook upon life is warped and cramped; whose parents are unable to bear the financial burden incident to reclaiming them; and who will, except for assistance from the State or private philanthropy, go through life on the debit side of the ledger of our personnel.

This problem can be best presented, I think, by asking and answering three pertinent questions:

1. What is the problem of the crippled child?
2. What is being done to solve this problem?
3. How can it be satisfactorily solved?

In answer to question one: In States where accurate child surveys have been made, it has been found that there are fifteen hundred crippled children to each million of population, and that 80 to 90 per cent of them are children of indigent parents. This would mean that we have at least twelve hundred indigent crippled children, under fifteen years of age, in Florida. The problem, then, in abstract, is to find, care for, cure and educate these children; to be prepared to prevent as many of these casualties as possible in future, and to continue taking care of the unpreventable ones.

In answer to question two: I think a few statistics gotten up a year ago, though statistics are proverbially dry, might be of interest here.

Nine of the thirteen Southern States have no appropriation for the care of their crippled children, and four have yearly appropriations as follows: North Carolina, $65,000.00; Virginia, $25,000.00; Maryland, $20,000.00, and Florida, $10,000.00.

In addition there are the following institutions supported by private philanthrophy: Masonic hospitals in Louisiana, Georgia, and Texas; two hospital schools in Maryland with a total capacity of 109 beds; two in Tennessee with a capacity of 50 beds; one in Kentucky, and four clinics in North Carolina, the capacity of which I do not know. This, of course, is a wonderful amount of work being accomplished by private endowment, but this should be recognized as a distinctly State problem, and financed as such.

Our own State was one of the first to acknowledge the responsibility it has to the crippled child when, in 1911, due to the untiring efforts and pioneer work of Drs. R. C. Turck and J. Y. Porter, the legislature made an appropriation of $10,000.00 per year to carry on this work. This appropriation has been available each year since, with the exception of the past two years, ending in June, 1924.

A great deal of good has been accomplished, but the funds have been so limited that not more than fifty of the twelve hundred children could be taken care of each year; so you see it has really amounted to not much more than an acknowledgment, on the part of the State, of its responsibility to these children. This work is still in progress, under the jurisdiction of the State Board of Health.

In answer to question three: Let us consider what the ideal management of this problem should include, and how this can be accomplished by the State.

Included in the reclamation program should be:

1. The finding of the children by an adequate and continuous child survey, which would make available information concerning the type of disability from which each child suffers, the necessity for hospitalization, and the benefits which could be expected therefrom.

2. Correction of the correctable disabilities, by competent orthopedic surgeons, in hospitals and convalescent homes properly equipped for this

purpose, and not too far removed from the district from which the children are to be drawn.

3. Follow-up work by competent social service workers, who will contact the child in its home after it leaves the convalescent home, and see that progress on the road to normalcy is not interrupted, and that the child reports to the nearest examining center when necessary for adjustment of braces, etc.

4. Special education, which should be carried on all during the corrective period, finally turning the cured cases into our public-school system, equipped to take up the regular school curriculum in grades with the normal children of their age; or if the defect is incurable, or only partially curable, to carry the education along lines of useful endeavors which are compatible with the deformity from which the child suffers.

You will probably say immediately that the above plan is visionary, and entirely prohibitive in cost. Let us see if it is. The economic value of a self-supporting productive citizen has been estimated at $6,000.00. Statistics show that 75 per cent of the disabilities in question can be corrected. This would mean the adding of 900 useful citizens or $5,400,000.00 to the personnel of our State. This is in addition to the vast wealth of happiness which would be added to the lives of the rehabilitated children, and to those who had a hand in their reconstruction.

Entirely aside from the profits which would accrue, I think we must surely admit that it is distinctly a *duty* of the State to do this; just as much of a duty as the care of the insane and the education of the normal children. It should be more of a duty than either, because the majority of these children can be cured, which cannot be said of the insane, and they need education more than do normal children in order to be self-supporting.

One of our States stands out as a glowing example of what can really be accomplished along this line. I refer to Ohio. Originating in the mind and heart of Edgar Allen, a Rotarian of Elyria; spread by his enthusiasm and hard work throughout all the Rotary Clubs of Ohio, and framed and sponsored by them, there was passed legislation which provides hospital care for all cases, and special educational facilities in each county where there are as many as seven or eight children whose disabilities prevent their attending the public schools. The bill provides $300.00 per year, per child, for this specialized education. Today, as a result of this work, there are over one thousand children constantly under treatment for correctable disabilities, and eight hundred in special schools, being fitted for lives of useful endeavor, which are compatible with their deformities.

Ohio is one State which has recognized its duty and *gone to it.*

THE MALARIA PROBLEM

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Talk to almost any citizen living north of the Mason and Dixon's line who has never traveled in the South and you will find him firmly convinced that nearly everyone living in the South has malaria. Large numbers of white farmers have refused to come South to settle because they were afraid of health conditions. Manufacturers have refused to consider southern factory sites because they were told that southern labor was inefficient on account of hookworm and malaria. A letter recently received from one of the largest insurance companies in the United States stated: "Forty years ago the chief obstacle to standard underwriting in life insurance in the South were yellow fever, cholera, smallpox, malaria and typhoid fever. * * * At the present time, malaria and typhoid fever are the two outstanding difficulties in certain localized areas in the South." No other disease today plays so great a role in retarding economic development.

The idea that the whole South is malarious is an absurd and a pernicious bit of social psychology, which should be vigorously opposed. It is due to two causes. First, the idea is an inheritance from the early pioneer days when the disease was much more widely prevalent than it is now. Second, the diagnosis "malaria" was formerly used to include almost any fever or ill-defined human ailment. This led to a great exaggeration of the prevalence of the disease which are still being felt.

The malaria problem of the South then resolves itself into efforts to correct the exaggerated ideas of its prevalence, to conduct sufficient field studies to locate the areas in which the disease really is a problem of public health importance, and in these areas to promote the operation of those forces which will tend to

diminish the incidence of the disease and ultimately to cause its disappearance.

1. To Correct the exaggerated ideas of Malaria Prevalence.

For the first of these problems the medical profession itself has been largely responsible. A report of the Board of Censors of the Alabama State Medical Association published in 1881 attributes not less than one-fourth of all the causes of sickness, and not less than one-sixth of all the deaths that occurred in Alabama to the *"Result of malarial influences."* The report defines the term "Malarial Influences" as follows: "The following list includes the diseases most commonly recognized as malaria, but *is not presented as exhaustive:*

"1. Malarial fevers, commonly so-called, such as bilious or remittent, intermittent, congestive, hemorrhagic;

"2. Malarial neuralgias, including the so-called sun-pains or brow-agues, and bilious colics;

"3. Malarial dysenteries and diarrhœas;

"4. Malarial dropsies, malarial leukemia, and the malarial cachexias generally."

In other words, the diagnosis "malarial" or "malarial influence" was used to label almost any diseased condition which was not specifically otherwise accounted for.

Came the great age of medical discovery. Medical science took a tremendous leap forward. The art of diagnosis became more exact. Standards of medical education and licensure were raised. The microscope and the diagnostic laboratory came to be better appreciated. The etiology of a large number of conditions hitherto not well understood were clarified. Particularly the ravages of the hookworm came to be appreciated through the efforts of Dr. Stiles and his collaborators. The sallow, anemic, lazy undernourished individual so frequently seen in certain rural districts of the South was more often the victim of the intestinal parasite than of the blood parasite. The diagnosis of malaria came to rest more and more upon the demonstration of the parasite in blood smears; less and less upon the "therapeutic test with quinine." The number of physicians who use the term malaria to denote any condition which improves *after* the use of quinine has become constantly smaller. Not many now tell a patient that he is "full of malaria" unless the parasite can be demonstrated in his blood. But the "general public" is still several generations behind.

With the increasing accuracy in "diagnosis," then, the malaria "miasm" of the South has cleared somewhat, but a conscious effort is necessary to accelerate the disillusionment. Last year the State Laboratories alone of Florida examined 6,604 blood smears taken from patients suspected of having malaria. Of these only 236 or 3.6 per cent were positive. Granting that the laboratory can demonstrate the parasites in only one-third to one-half of the clinical cases of malaria, it is still obvious that a very large number of cases would have been mistakenly diagnosed had not this laboratory service been available. With a constantly increasing number of physicians utilizing laboratory service, the error should grow constantly smaller. Laity as well as physicians are learning that the disease is not so common as was formerly thought.

Another source of information which has led to exaggeration of malaria is death certificates. A recent analysis in an adjoining State indicated that probably not more than one-half of the deaths attributed to malaria should properly have been so attributed. In less than 12 per cent of the total number over a two-year period was the diagnosis confirmed by a blood smear, and yet it is well known that the parasite can be demonstrated in the blood of 90 per cent of patients dying of the disease. "Malaria" is a very easy word to write on a death certificate when the proper entry should be "Cause ill-defined or undetermined," but as a result of the loose use of the term the State gets unenviable publicity on account of a fictitiously high malaria death rate.

Physicians owe it to their patients, to the communities in which they live and to the State to be careful in the use of this diagnosis. It has an economic significance which no other disease has. *They should confirm the diagnosis in as many instances as possible* by the examination of a blood smear.

2. To Locate the Areas in Which the Disease is Really a Public Health Problem.

As the malaria "miasm" disappears we are coming to a truer realization of the limited distribution of the disease and the conditions which are required for its maintenance.

It can be transmitted only where a particular species of mosquito—Anopheles quadrimaculatus (rarely Anopheles crucians also)—is breeding out in large numbers. This particular mosquito is rather fastidious about her breeding places. She does not like the tin can, the old wash boiler,

the rain barrel, the cess-pool or even the green scummy pond with the dank smell of rotting vegetation. These are left for the Stegomyia—carrier of yellow fever and dengue—and the pestiferous culicides.

She much prefers the relatively clean, quiet water found in the partly shaded grassy pool, the may-haw or lime-sink pond full of luxuriant vegetation, the margins of lakes or bayous, the sweet-gum or cypress swamp. She thrives in the flat, wet and partially cleared open country. *Per contra* she is rare where the land is hilly and well-drained; rare about the salt marshes and savannahs; rare where the land is dry and sandy with clear pools abounding in top minnows (Gambusia affinis), with clean banks and little or no aquatic vegetation.

Within one mile of this breeding place (for this is the flight range) of the malaria mosquito there must be located a population living under such conditions that mosquitoes have ready access to them—can easily become infected from them with the malaria parasite and then easily reach a new victim after the parasite has completed its cycle of development in the mosquito.

The larger the number of chronic cases of malaria in this population, the easier it is to effect this transmission. The number of chronic cases depends in turn upon neglect and lack of proper medical care. Where the population is ignorant and superstitious, where the physician is called only when death is impending, where self-medication with nostrums and inadequate chill tonics is the rule—among such people a large proportion of the persons who have malaria become chronic carriers of the parasite and are ready to supply it to any newly hatched Anopheline that may happen along. On the other hand, where medical treatment is good, quinine administered early and continued in adequate doses over a period of eight to ten weeks to prevent relapse, the percentage of cases which becomes chronic is much smaller; and it is correspondingly more difficult for the mosquito to become infected.

In the same manner, where the housing is poor, where the people live in wooden shacks, log cabins or tents with little or no protection from mosquito bites, large numbers take their blood meal upon these human beings and the chances of transmission are obviously increased.

Briefly stated, conditions which favor the propagation of malaria in the southern United States are such as are usually found:

(a) among pioneers, sawmill hands and laborers on construction projects, and

(b) among poor white or negro "tenants," "renters" or "farm hands" on cotton plantations and small farms, living under poor conditions of housing, screening and medical attention and in close proximity to a pond, lake, swamp or bayou.

It is thus seen that malaria transmission is taking place only in certain definite localities or foci where the requisite conditions as regards the insect vector—the Anopheles mosquito—and its human host are realized. This scattered or focal distribution of the disease is obscured by three factors. First, the long duration of the infection in man; the parasites may be carried by man, one, two, even five years or more after the original infection, with or without an occasional clinical relapse. During this time he may have moved to some distance from his original environment—and the community in which he relapses is apt to be credited with responsibility for his infection. Second, in this day of rapid and remote transportation by automobile, persons may be infected at considerable distance from their homes—on a vacation trip, on a fishing trip or on a trip to the plantation—and attribute their infection to their home environment where most of their time has been spent. Third, in a locality where a few cases of true malaria (imported infection and relapses) are occurring, there is a tendency on the part of physicians to attribute too many cases to the same cause.

Applying these principles, now, to the situation in Florida, it will become clear why the disease exists in some localities and not in others and why it has disappeared from large areas where formerly it flourished.

Where the land has been largely cleared and drained, and is being intensively cultivated, where the economic status is good, where houses are well constructed and screened, where the standards of living are high and good medical attention easily available—as is the case along most of the east coast, in south Florida and in parts of west Florida—there the disease has largely disappeared except for the occasional small focus.

On the other hand, where lumbering operations are still going on, where much of the settlement is primitive in character, where negroes form a large proportion of the agricultural labor, where the topography favors production of the Anopheline mosquito—as along the upper west

coast and in central Florida, Hernando, Citrus, Levy, Lafayette, Taylor, Jefferson, Leon, Gadsden and Jackson,—here the malaria problem is still intense.

The accompanying Table I, based upon death rates from malaria, indicates in a rough way the general distribution of the disease and its relative intensity. A rate above 5 per 10,000 generally indicates a serious malaria problem. Rates below this usually accompany a scattered and moderate problem. Counties with rates less than 1 per 10,000 have been omitted since experience has demonstrated that they are of doubtful significance.

For example, in Taylor County, with an average annual malaria death rate of 14.3 per 10,000, in a survey of 626 white school children conducted last winter about one-third gave a history of "chills and fever" during the preceding year. Eight per cent of these children had definitely enlarged spleens due to chronic and repeated attacks of malaria. Of 104 blood smears examined 30 were found to contain the malarial plasmodium. One would not hesitate to say that this constitutes a serious health problem.

On the other hand, in Pinellas County, with an average annual malaria death rate of less than 1, in a very careful study of 5,174 school children made by Dr. Milton Veldee in 1921, less than one per cent gave a history of "chills and fever" during the preceding year. A large group of boys living in suspected localities were examined for enlarged spleens with negative result. The findings indicate that malaria does not constitute a health problem in this county, and this inference was confirmed by the experience of the physicians practicing in the county.

These findings represent the two extremes. In large parts of Florida there is no malaria problem at all and the prospective settler need have no fear of the disease. In other parts of Florida, the malaria problem is sufficiently severe to discourage immigration and development. Here there is a serious economic handicap deserving the most careful attention of health authorities, broad-minded physicians and an enlightened citizenry.

Further studies must be conducted by the State Board of Health to map out in each county the areas in which transmission is taking place and to study the relative importance of the disease to the general welfare and economic development of each county. When this has been done the problem of control will have been reduced to more concrete terms. The task will assume more definite proportions. The risk of attack from malaria in Florida is confined to much more limited areas than is generally supposed.

3. To Promote the Operation of Those Forces Which Tend to Diminish the Incidence of Malaria.

When one faces the facts of practical field work, the control of malaria is not a simple matter. About cities and small towns it is usually relatively easy with a reasonable expenditure of money, time and effort to prevent all possibility of malaria transmission by elimination of the breeding places of the Anopheles mosquito. As a result of the energetic efforts of the State Board of Health and Florida Anti-Mosquito Association, this is being done by progressive municipalities all over the State. City and town control, however, will have little direct effect upon the malaria incidence of the State. *Malaria is primarily a rural disease.*

In the rural districts control of malaria by elimination of the breeding places of the Anopheles mosquito is a much more difficult matter—on account of the large production areas involved and the scatter of population. It is also to be remembered in this connection that malaria is primarily a disease of people in poor economic status. In other words, the per capita costs increase, the per capita wealth decreases, and this method of control becomes impractical.

In selected areas it will be found that Anopheline control by means of drainage will at the same time effect an agricultural benefit; the malaria problem is the direct result of poor farming—neglect of proper soil drainage. Under these circumstances it is usually a simple matter to effect proper solution. Again, undrained borrow-pits along highways and railroad fills, misplaced and blocked culverts, and water impounded for power or fishing purposes often create a problem, so-called "man-made malaria," that can be easily corrected.

On the other hand, when one looks upon the hundreds and hundreds of acres of wet, swampy land in some counties and realizes the costly, large scale drainage operations and maintenance that will be necessary to reclaim this land and effect Anopheline control, the day when malaria will disappear for want of a vector appears only in the dim and far distant future.

This need not discourage us, however. Not so many years ago the disease prevailed over most of the United States east of the Rocky Mountains and south of the Great Lakes. Gradually it is disappearing. The northern border of the malaria belt now runs from Tennessee to southern Virginia. In the west it extends only as far as southeast Oklahoma and the eastern half of Texas. The Mountain and Piedmont sections of the South are practically free from it. Everywhere one meets the same testimony—that the disease is becoming less prevalent and less severe. Cases of hemorrhagic malaria (malarial hematuria) are becoming increasingly rare. The disease is constantly confined within narrower and narrow limits. Figures for the past five years indicate a net decline of forty-two per cent in deaths. There must be a reason or several reasons for this general decline.

In some instances, the decrease had undoubtedly resulted from elimination of the breeding places of Anopheles, with the clearing, draining and cultivation incident upon advancing cililization. In others, the disease has disappeared in spite of the fact that Anopheles mosquitoes are as numerous as ever. I need only note, as an example of the latter in this country, the observations of Dr. M. A. Barber of the U. S. Public Health Service, on the relative absence of malaria from the Louisiana and Arkansas rice fields where Anopheles quadrimaculatus is to be found in tremendous numbers.

It is not intended to minimize the value of anti-mosquito measures. This is the ideal method of attack when and where it is practicable. At the same time it is desired to emphasize the fact that when elimination of the mosquito is impractical, it is still possible to reduce the disease to a very low level, if not to eliminate it entirely.

The factors which tend to cause the disease to disappear even where the Anopheles mosquito is relatively plentiful are more or less well known. They are education of the general public regarding the role of the mosquito in conveying the disease so that a constantly larger number take precaution; a more wide-spread and better use of screens; the more intelligent use of quinine—particularly the giving of quinine in adequate doses for six to eight weeks after recovery from the acute attack to prevent a relapse; and finally the gradual rise in the level of physical welfare and of living conditions in this country.

The last named factor is perhaps quite as important as any. It is no new thesis that a poor physical specimen is a good candidate for chronic malaria. Physicians have long realized that the elimination of other physical ailments was necessary to clear up chronic malaria. The lowered incidence of hookworm infection, of tuberculosis and the more adequate treatment of venereal diseases undoubtedly has a direct effect in lowering the number of "carriers" of malaria. Better care of babies and children, better understanding and popular knowledge of nutrition, better habits

TABLE I—The Average Mortality Rate From Malaria in Florida Counties Based on the Five-Year Period 1919-1923.

County	*Deaths from Malaria per 100,000 Population.*
Citrus	15.3
Taylor	14.3
Jefferson	13.1
Lafayette	12.9
Levy	12.0
Madison	10.9
Jackson	10.0
Hernando	8.8
Leon	8.3
Suwanee	6.6
Sumter	6.4
Gadsden	5.1
Marion	5.0
Calhoun	4.6
Pasco	4.5
Columbia	4.2
Liberty	4.0
Wakulla	4.0
Holmes	3.0
Lake	3.9
Bay	3.5
Washington	3.4
Alachua	3.3
Hamilton	3.0
Putnam	2.0
Manatee	2.6
Polk	2.3
Franklin	2.0
Orange	2.0
Seminole	1.9
Nassau	1.8
Baker	1.8
Hillsboro	1.7
Bradford	1.6
DeSoto	1.6
Palm Beach	1.6
Santa Rosa	1.5
St. Lucie	1.3
Volusia	1.3
Duval	1.1
Okeechobee	1.1

TABLE II—Number of Deaths and Death Rate From Malaria in Florida, 1919 to 1923.

Year.	*Number of Deaths*			*Death Rate per 100,000*		
	White	*Colored*	*Total*	*White*	*Colored*	*Total*
1919	241	176	417	38.2	53.9	43.6
1920	195	149	344	30.2	44.6	35.1
1921	120	111	231	18.2	32.5	23.1
1922	127	120	247	18.8	39.0	24.4
1923	161	132	293	23.0	37.6	28.4

of living generally lead to increased resistance. Finally, with the rise in economic status—better food, better clothing, pure water, more comfortable living conditions and more adequate medical attention—it is much more difficult for the parasite to maintain itself.

To be sure it is not an easy matter to better the general living conditions of a population. Happily the trend is already in that direction in Florida. That this will have its effect in a lessened malaria rate is undoubted. Physicians and the more intelligent members of the community can do much to accelerate progress. *Adequate provision must ultimately be made in every county for an organized health agency which will carry on the work of educating the public in general sanitation, in nutrition and the hygiene of living,* teaching them how to screen their houses, how to protect themselves from mosquito bites, to see that adequate medical attention and reasonable freedom from disease is had by all citizens irrespective of "race, color or previous condition of servitude." Even a slight improvement in the general level may be sufficient to bring about reduction and the ultimate diseappearance of malaria from a given area.

A VITAL POINT IN THE WAR AGAINST TUBERCULOSIS

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For many years the fight against tuberculosis has been carried on from various angles and must be continued with ever greater effort.

Tuberculosis was known long before the Christian era, although it was then known as phthisis, the present name came into use in the latter part of the 18th century.

Laennec (1781-1826) laid the foundation for our present-day knowledge of the pathological changes due to this infection, while Villemin in 1865 showed by animal inoculation that tuberculosis was caused by a specific organism whether it was tuberculosis of the bones, glands, lungs or other organ.

When Koch, in 1882, announced to the world that the organisms causing this disease had been found he completed the chain of evidence as to the cause of tuberculosis and now it remains for the future to give us a specific remedy such as we have in antitoxin for diphtheria and tetanus or quinine in malaria.

There is probably no disease that has been the cause of as much research, but as yet the question is far from being solved.

It is not the purpose of this paper to touch on treatment, but it would hardly do not to mention a few of the fundamentals that are so well known as fresh air and rest which have been so effective in the care of cases.

The Life of Trudeau is an inspiration to any one and if there are any here who have not read this autobiography they have a treat in store, for it is a book that all, and especially those interested in this subject, should read.

While we know the cause of tuberculosis, the source and mode of transmission of the infection, and although hundreds, yes, thousands are devoting their lives to the study and prevention of this disease, it still is near the front as a cause of death and only recently was dislodged as the leading cause.

What must we do to reduce the toll of human lives taken in a great measure from early adult life when their power for production should be at its best, for surely this needless loss must be stopped?

When a diagnosis is made in the early stages and when the patient can and will follow the advice of his physician a large percentage of cures is obtained, but if the diagnosis is made late in the disease the chances for recovery are greatly diminished. Surely an early diagnosis is a prime essential.

It is a well-known fact that those affected with the pulmonary form of the disease expell tubercle baccilli in the sputum, and this is well known to all but not every one is careful to protect others at all times by covering the mouth and nose when coughing or sneezing, but these acts also may carry the infection to others and every one, whether tubercular or not, should cover mouth and nose every time he coughs or sneezes.

Some years ago a tubercular patient who always protected others by the use of gauze before his mouth when coughing, brought one of those he had used for half a day, and he, by the way, was not an acute case, asking if we would test to see if there were tubercle germs present. His habit was to use a piece of gauze a half day; between times of use it was carried in an envelope in his pocket and at the end of use envelope and gauze were burned.

We placed the gauze in a sterile flask and moistened it with sterile water, letting it stand for about two hours, then we inoculated two guinea pigs with the water. Both pigs developed typical tubercular lesions and we found tubercle bacilli in stained smears from these lesions.

This result being obtained from such a case, how much greater is the danger from sputum infection from frank open cases?

Sanatorium training will make a safe member of society of a tubercular case, for there he is trained not only how to take care of himself but also how to safeguard others, and it is the cases of tuberculosis that are responsible for a great majority of new cases, a smaller number obtaining their infection from tubercular animals.

If with the knowledge of the cause and the availability of early diagnosis we have made but little headway in the fight against tuberculosis, there certainly is some reason why we have failed to prevent the tremendous loss of health, happiness and life, to say nothing of the economic loss to the world.

It seems to the writer that the most vital point in this warfare is education, not merely the chance to learn but the real education that is put across so it reaches the people and really gets action.

Our citizens must be educated to understand that the physician can make a diagnosis long before the laboratory is able to find the bacilli. It is because of this fact that the laboratories of the State Board of Health refuse to give the results of sputum examinations to patients for, if we did report to them all, too many would accept a negative report as proof that they did not have the disease when, as a matter of fact, they might have fairly well advanced cases. The laboratory can only find the bacilli when the case has gone on to the point of breaking down of the tissue and the discharge of the bacilli into the air passages.

Our citizens must be educated to realize that any persistent cough should be attended to and that a thorough examination of the lungs should be made.

Our citizens must be educated to realize that there should be sanatoria for both early and frank open cases of tuberculosis and that it is better that these two classes of cases should be in separate institutions.

Our citizens must be educated to realize that, while tuberculosis is not inherited, children reared in homes where tuberculosis exists are in direct contact with the infection and at the time when they have had not chance to develop an immunity, therefore there should be a place where such children can be cared for instead of allowing them to become infected.

Our citizens must be educated to realize that even those who are apparently well may, as a matter of fact, be on the direct road to a serious condition and that periodic complete physical examinations are an excellent insurance.

Our citizens must be educated to realize that while these items set forth above will cost money such expenditures will in the long run constitute a good investment, not only in the saving of lives but in the saving of money as well.

COMMUNITY HEALTH AND THE PHYSICIAN

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What interests does a physician have in community health and how can he be of service to his community?

It has often been said that the doctor works against his own interests. Sure, he tries to save his patient and to keep him well. Health boards try to prevent community sickness and if they do so there is less exercise for the healing arts of the doctor.

The public expects interest of the physician in community health. He has been made a privileged person. He is qualified by the State to practice his healing arts and is under obligation because of this qualification to report births, deaths and communicable disease. Too frequently these are the only public health functions he enjoys.

The matter of pure air, pure water, pure food, clean milk, sewage disposal, concurrent disinfection, health centers, infant and child hygiene, vision conservation, midwife supervision, prenatal instruction, venereal prophylaxis, sex education, dental hygiene, mental hygiene, the tuberculosis and cancer crusade and the periodic health examination of apparently healthy people are problems too often intrusted by him to someone else. Sanitation (garbage removal, fly and mosquito extermination) are matters not only for the Board of Health, yet in seven years only

three physicians have inquired or made personal comment of these conditions to me.

Modern health department practice is founded upon a logical basis and the physician with his knowledge is, and should be, the leader in the community in inaugurating the various health activities. A health officer frequently attempts to interest the laity in these movements without explaining them to the community physicians. As a result his course in the matter is difficult and success much slower than if he had the backing of his practicing colleagues.

Each County Medical Society should have at least one and, if possible, several health programs each year. There should be investigations by the society of the health status of the community and committees should be appointed to report upon the advisability of the starting of any new public health enterprises. If the community is well informed that the doctors know what is needed the inauguration and carrying out to a successful conclusion of any proposed public health measure is comparatively easy. Debatable matters should be thoroughly threshed out and settled in the society and a united front made by the society to the public.

In the pursuit of private practice the physician can have a good word for vaccination, anti-typhoid inoculation and toxin anti-toxin. These are proven preventives, yet the public does not take kindly to them because of the minor personal inconvenience attending them at times.

"Health Weeks" for the public can be put on by a county society. The best speakers of the society can give talks on diet, exercise, constipation, blood pressure, prenatal hygiene and care of babies. The public is anxious to acquire more knowledge of sex hygiene, tuberculosis and cancer prevention. Tickets to these lectures can be sent to patients without being unethical. People appreciate a personal interest as they are generally more or less friendly with their physician.

The women's clubs of Florida are receiving literature on the yearly health examination of healthy people. The county society can secure information and blanks from *The Journal of the American Medical Association.* This is a purely medical proposition, but it is far-reaching and the community doctors should take the lead.

The health department budget of the community should have the approval of the county society. The health officer should have their confidence and support. If he has not the confidence of the profession his work will be seriously handicapped. Public health should not be made a football of politics to be buffeted about at the will and whim of petty politicians and should receive the united and whole-hearted support and assistance of the medical profession.

HEALTH EXAMINATION

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The periodical health examination has been so popularized by official and volunteer health agencies and insurance companies that the physician is being called on with increasing frequency to examine and advise people who are not ill in the usual sense of the word, but who seek to know whether there is any latent or incipient disease that can, if recognized and treated in time, be cured or held in abeyance.

Taking stock annually, from infancy to old age, is perhaps as pertinent to the life and success of an individual as it is to a business venture and just as likely to forecast and forestall bankruptcy.

The need of these examinations is emphasized by the large proportion of defectives found in representative groups of persons who have been examined. At Framingham, Mass., out of 4,000 examined, 77 per cent were found to have defects and even a higher percentage of defects was found in large groups examined in New York and Philadelphia. One-third of the drafted men were rejected and 47 per cent were defective, and these were men in the prime of life.

The perfect human is indeed a rare being.

Most people consult a physician because they are ill, and the nature of their illness can be detected very often if at all, only after the most painstaking investigation; even then there is sometimes a disagreement among imminent diagnosticians. Certainly no less care and skill will be required to detect incipient diseases. The time has gone by when a doctor could listen to a patient's complaint, look at his tongue and feel his pulse, then announce his diagnosis. Such a diagnosis would be just as unscientific and inaccurate in a birthday examination as in the case of a sick person. The physician owes it, not alone to the person who seeks his services, but

equally to himself, to make the examination as complete and accurate as his training, experience and equipment enable him to make it, for if one remedial defect is overlooked, it may shorten the life of the person examined, a responsibility no man would care to have.

Family and personal history, including diseases of childhood and other previous illness, are just as essential a part of the health examination as of any other. Information about personal habits of rest, exercise, eating, drinking, the use of drugs, narcotics and nostrums, is also worthy of attention, likewise knowledge of the candidate's living conditions. Is the home properly ventilated, heated, lighted and screened? Is the humidity of the air maintained in heated rooms during winter? Is there an adequate supply of good water? Are human excreta and other wastes properly disposed of? Has the person been immunized against smallpox, typhoid and diphtheria? All these are certainly pertinent questions.

The patient should be weighed and measured, his normal weight and his percentage of over or underweight determined. If necessary, advice should be given concerning diet, and the functional activity of the endocrine glands should receive consideration.

The possibility of venereal infection or sequelæ should be considered, the blood pressure should be taken, hemoglobin estimated and urine examined. The heart and lungs should be examined.

Infants and small children should be examined once a month and with special reference to normal increase in length and weight and the functions of skin, muscles, kidneys and bowels. The mother should be taught how to keep baby free of colic, diarrhœa, scurvy and rickets.

Children of school age may well be weighed and measured each month and inspected once or twice a year for detection of disease of eye, ear, nose or throat, skin, heart or lungs and dental caries. The possibility of incipient tuberculosis in youths and young adults should ever be borne in mind, while persons in the later years of life must be studied with a view of detecting and preventing the degenerative diseases of heart, kidneys and respiratory organs, also cancer and diabetes. In short, the life extension examination should be sufficiently extensive to detect any of the diseases ordinarily expected in people of the age, color, sex, habits and environment of the candidate. It may well follow the plan of a properly conducted life insurance examination or that to which the army officer submits each year. If well systematized, it need not take over one-half to one hour.

The expectant mother may not well be overlooked in the discussion of health examinations. The menace of nephritis is well recognized, but other diseases affecting both mother and child should receive more attention, among them, venereal diseases.

The doctor himself is perhaps as prone as anyone to neglect his health. He, of all people, should go to a competent colleague and have a complete inventory of his mental and physical assets as well as liabilities.

This article has been written with a full knowledge that each candidate for examination will present a problem different from all others, and no attempt has been made to lay down any hard and fast rules for guidance of the examiner. It is the hope and belief of the writer that the medical profession will agree upon a minimum standard of procedure and prepare an outline to serve as a guide in making the examinations.

BIRTH REGISTRATION

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By the time this article is published or very soon thereafter, you will have full information regarding the outcome of the birth registration test in Florida. It is rather difficult to write a paper on this subject on the very eve of the Government test. While we know that the Florida birth records are not one hundred per cent complete, a great deal of work has been done along the lines of birth registration, and we are optimistic as to the outcome of the test which will be started the first of August.

Those physicians in this State who are so splendidly co-operating in the reporting of births are to be congratulated. Better co-operation from the physicians is being observed now than at any time since the enactment of the Model Vital Statistics Law. This activity in the filing of birth certificates, promptly, on the part of the physicians is certainly a mark of progress in this State.

The Vital Statistics Law in Florida, which is known as the Model Vital Statistics Law, was

prepared after twenty (20) years of experience, and is recommended as the best and most practical known to the Government. This law was passed in Florida during the year 1915 and went into operation in 1917.

The number of births received has increased each year for the past seven years with the exception of the year 1922. Just why the birth records for 1922 did not show an increase over 1921 is more or less of a speculation. It was during the year 1922 that the first birth registration test was inaugurated in Florida, and it is claimed that any registration test has a tendency to increase registration for that particular year or period. However, the results after the test of 1922 did not substantiate this idea. Nineteen hundred and twenty-one shows more births registered than in 1922, and 1923 shows more births registered than for any year in the history of Florida. The year 1924 has started out as a record-breaker with eight hundred (800) more births registered for the first four months than for the same period of the previous year.

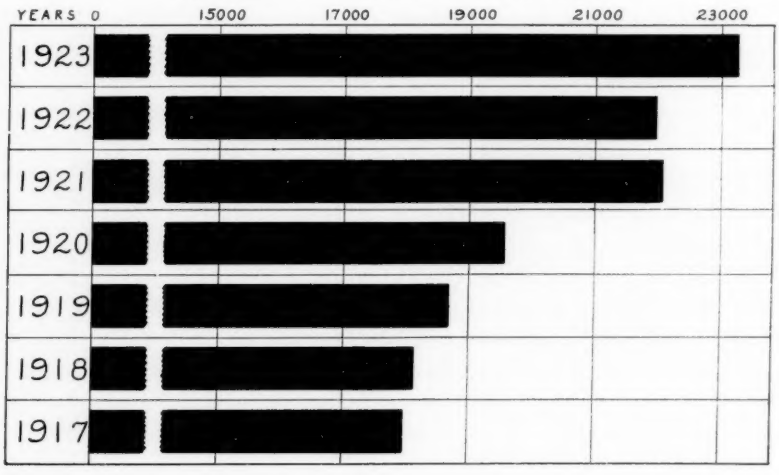
The following table shows the total number of living births registered each year for the past seven years, and also the number of white babies as compared with the number of colored:

	Total	*White*	*Colored*
1923	23,221	15,614	7,607
1922	21,973	15,274	6,699
1921	22,074	15,221	6,863
1920	19,540	13,541	5,999
1919	18,653	12,863	5,790
1918	18,141	12,628	5,513
1917	17,921	12,701	5,220

The graph shown below indicates the number of births registered each year, 1917 to 1923, inclusive:

The following table shows the number of births and birth rates per thousand (1,000) population, by counties and by color, for 1923:

	Total		*White*		*Colored*	
Counties	*Births*	*Rate*	*Births*	*Rate*	*Births*	*Rate*
0. State	23,221	22.2	15,614	22.0	7,607	23.1
1. Alachua	646	20.4	392	22.9	254	17.4
2. Baker	151	25.5	120	27.2	31	20.5
3. Bay	323	25.7	242	25.4	81	26.6
4. Bradford	136	19.0	98	†	38	†
5. Brevard	184	18.7	114	16.3	70	24.2
6. Broward	179	28.0	109	24.8	70	35.2
7. Calhoun	225	24.1	174	25.5	51	20.1
55. Charlotte	55	19.7	44	†	11	†
8. Citrus	94	18.0	58	21.5	36	14.2
9. Clay	105	18.7	70	19.7	35	16.9
62. Collier*	....	....	....	....	....	....
10. Columbia	308	21.6	185	25.4	123	17.6
11. Dade	1,652	31.1	920	24.7	732	46.0
12. DeSoto	189	22.9	152	†	37	†
56. Dixie	14	7.3	14	†	0	†
13. Duval	2,703	21.2	1,610	21.3	1,093	21.0
14. Escambia	1,080	20.2	818	21.4	262	17.1
53. Flagler	36	13.6	22	13.7	14	13.4
15. Franklin	108	20.2	55	19.1	53	21.3
16. Gadsden‡	562	23.4	202	21.8	360	24.4
57. Glades	56	18.7	51	†	5	†
17. Hamilton	171	17.3	108	19.3	63	14.8
58. Hardee	249	23.7	235	†	14	†
63. Hendry*	....	....	....	....	....	....
18. Hernando	73	16.1	54	19.8	19	10.4
59. Highlands	96	19.6	78	†	18	†
19. Hillsboro	2,362	22.9	1,966	24.5	396	21.3
20. Holmes	227	17.1	213	17.3	14	14.3
21. Jackson	689	21.7	393	21.0	296	22.8
22. Jefferson	361	24.8	71	17.8	290	27.5
23. Lafayette	124	28.7	115	†	9	†
24. Lake	340	24.4	237	23.6	103	26.5
25. Lee	201	18.8	173	19.2	28	16.3
26. Leon	412	22.8	100	17.0	312	25.6
27. Levy	198	20.0	126	20.6	72	18.2
28. Liberty	122	23.9	82	29.0	40	17.5
29. Madison	355	21.5	168	20.9	187	22.0
30. Manatee	299	17.8	197	†	102	†
31. Marion	504	21.0	248	22.4	256	19.7
32. Monroe	394	20.2	309	20.3	85	19.6
33. Nassau	204	17.6	106	15.6	98	20.2
34. Okaloosa	233	24.0	190	24.3	43	22.0

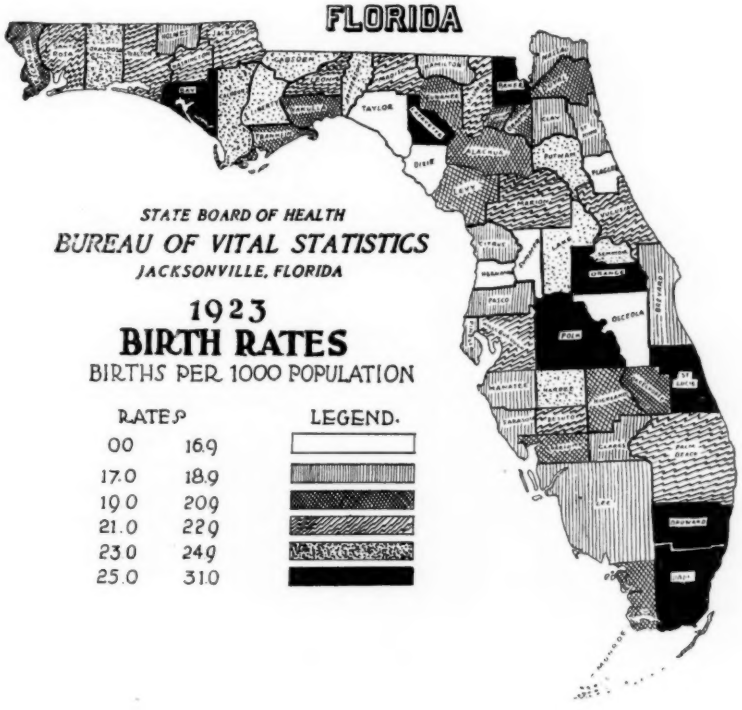


Counties	Total		White		Colored	
	Births	Rate	Births	Rate	Births	Rate
54. Okeechobee.	52	19.6	51	21.7	1	3.3
35. Orange ...	616	27.2	474	28.9	142	22.8
36. Osceola ...	145	16.2	117	15.5	28	20.1
37. Palm Beach	490	21.1	329	20.3	161	23.1
38. Pasco	172	18.6	147	20.1	25	12.7
39. Pinellas ...	550	17.4	489	18.4	61	12.0
40. Polk	1,171	26.7	945	27.9	226	22.5
41. Putnam ...	349	23.1	200	23.9	149	22.2
42. St. Johns...	268	18.9	174	19.2	94	18.3
43. St. Lucie...	280	28.5	203	27.3	77	32.3
44. Santa Rosa	310	21.8	249	22.2	61	20.6
60. Sarasota ..	97	18.4	80	†	17	†
45. Seminole...	310	24.8	164	24.3	146	25.4
46. Sumter	131	15.9	91	15.0	40	18.2
47. Suwannee..	398	19.7	257	21.0	141	17.6
48. Taylor	176	13.9	141	18.8	35	6.7
61. Union	106	19.9	83	†	23	†
49. Volusia ...	537	21.2	344	20.9	193	21.7
50. Wakulla ..	100	19.1	44	15.2	56	23.8
51. Walton ...	270	21.5	209	20.8	61	24.1
52. Washington	273	21.0	204	20.9	69	21.2

*Organized during 1923 from Lee County.
†Population by color not available.
‡State Hospital inmates included.

Dade County has the distinction of showing the highest birth rate of any county in the State, which is thirty-one point one (31.1) per one thousand (1,000) population. Lafayette County comes second with a rate of twenty-eight point seven (28.7) and St. Lucie third with a rate of twenty-eight point five (28.5). Dixie County shows the lowest birth rate of any county for 1923, which is due to a certain extent to the fact that it was difficult to secure anyone who could conveniently act as local registrar. This necessitated the changing of local registrars a number of times during the year. Another difficulty in Dixie County is, that the population is under two thousand (2,000) and very much scattered. A new local registrar has been appointed in the main district of this county, however, and we are expecting the records to be much more complete next year.

The birth rates for the calendar year 1923 are shown geographically in order that the rates in the State may be studied by counties and by groups of counties. The rates have been divided into six groups: First, those counties having a birth rate from 0 to 17; second, 17 to 19; third, 19 to 21; fourth, 21 to 23; fifth, 23 to 25, and sixth, 25 and over.



It is interesting to note a classification of the physicians who attended the twenty-three thousand two hundred and twenty-one (23,221) births last year.

The total number of physicians reporting births during the year was one thousand and forty-five (1,045) and the highest reported by any physician was one hundred and ninety-two (192). One hundred and fifty (150) physicians reported only one (1) birth last year, one hundred and thirty-six (136) physicians reported two (2) or three (3) births, two hundred and seventy-two (272) physicians reported five (5) to nine (9), two hundred and ninety-seven (297) physicians reported ten (10) to twenty-four (24), one hundred and twenty-seven (127) physicians reported twenty-five (25) to forty-nine (49), thirty-one (31) physicians reported fifty (50) to ninety-nine (99), one (1) physician reported one hundred (100) and another reported one hundred and one (101) births.

As to the number of births attended by physicians or midwives, it is interesting to note that fifty-nine and three-tenths (59.3) per cent of all the births registered last year were attended by physicians, and thirty-eight and five-tenths (38.5) per cent by midwives.

Among the white population eighty and eight-tenths (80.8) per cent of the babies were attended by physicians, as compared with sixteen and three-tenths (16.3) per cent by midwives. This ratio has been mentioned because of its bearing on the maternal death rate. We will not at this time discuss the need of education and supervision of midwives, as it would lead to a long discussion.

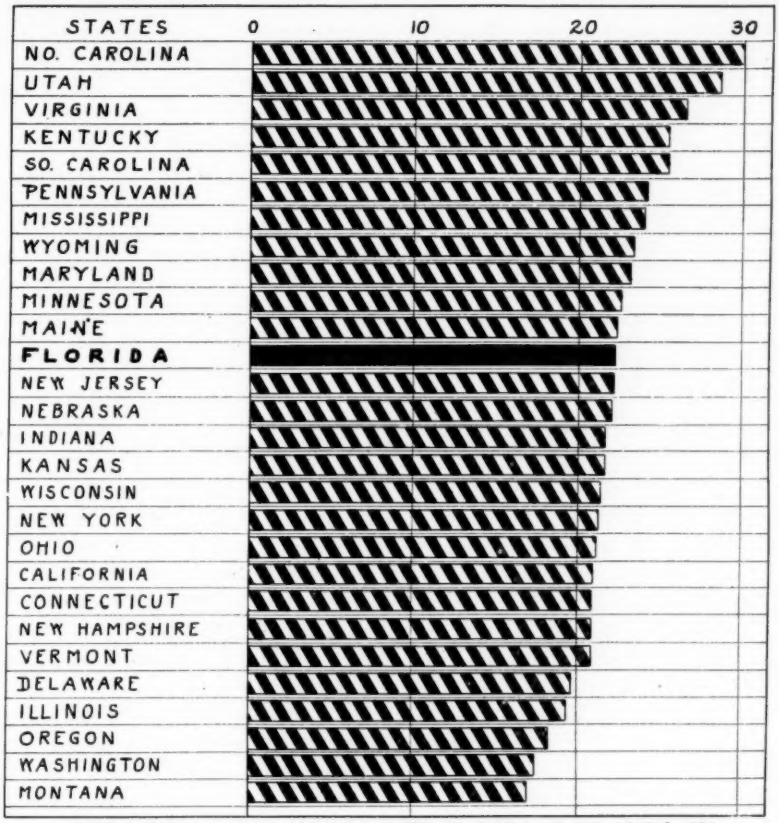
Data compiled for death rates of mothers from childbirth reveal some important and serious facts. Last year, in Florida, two hundred and eighty-seven (287) mothers died from childbirth, which is equivalent to a rate of twelve point eight (12.8) per thousand (1,000) live births reported. In the United States Registration Area for the year 1922, the death rate from puerperal causes as published by the Bureau of the Census was six point two (6.2). The separation of white and colored gives us a better comparison in this State. One hundred and sixty-four (164) deaths occurred among white women in Florida, equivalent to a rate of ten point five (10.5), as compared with a total of one hundred and twenty-three (123) colored with a rate of sixteen point two (16.2). This question was not brought up with a view to opening a discussion but rather to show the importance of birth registration as a factor in the unit of measure. The need for work as well as results obtained is influenced by birth registration.

You will note that all standard rates of deaths from puerperal causes are based on the number of births registered. If physicians fail to report births it is a reflection on their community as well as the State, owing to the fact that the death rates from these causes will show higher than they really are and would mislead rather than assist. The death rate in Florida from the puerperal state, is we believe, higher than is necessary. While we will not at this time draw conclusions as to the particular lines of endeavor that should be undertaken in order to rectify this condition, we appeal to the medical profession for cooperation in reporting all births in order that our standard of measure may be an authoritative guide.

The latest figures available from the Bureau of the Census, showing birth registration by States is a table of provisional figures published for the calendar year 1923. The birth rates for the twenty-three (23) States now in the Birth Registration Area were published and the following graph has been prepared to show where Florida would stand, provided the States was among those now in the Registration Area for Births. You will note that only eleven (11) States show a higher birth rate than Florida, while sixteen (16) States show a lower rate: (See p. 75.)

This illustration certainly looks favorable in the face of a birth registration test in this State. Every indication points to success as to our being able to show ninety (90) per cent completeness in birth registration. It is advantageous for any State to be accepted into the Birth Registration Area of the United States, as it will standardize the birth records, giving a great deal of publicity by sending the records in many publications from the Government to all parts of the world. The fact that a State is accepted into the Registration Area for Births makes the records more comparable with other States and other localities, as a certain standard of efficiency has been reached by all States represented in this Area.

Many authorities claim the infant mortality rate of a city, county or State is a fair indication of its sanitary condition. The infant mortality rate represents the number of deaths of infants



STATE RATE FOR FLORIDA AND PROVISIONAL RATES BY BUREAU OF THE CENSUS, AREA FOR BIRTH REGISTRATION OF THE U.S. (EX. MASS., MICH. AND N.Y.)

under one year of age per thousand (1,000) live births reported.

It is not necessary for me to take the time of the readers of this journal going over conditions causing infant deaths as that is a question with which you are familiar. One important factor, however, I would like very much to bring to your attention and that is, complete registration of all births that occur in your practice. It is to be regretted that there are still a few physicians in our midst who do not realize the importance and value of a birth certificate, or the great contribution the profession is rendering to the protection of public health by promptly filing birth certificates. If the birth certificates are not all filed it is a reflection on a community aside from losing a valuable legal record. Inasmuch as the total number of births is used as a basis for figuring infant mortality rates you may readily see that the more births that are reported the lower the infant mortality rate will show.

Dr. J. S. Sweeney has said, "Besides affording a means of computing the infant death rates and the crude birth rates, the births offer another most interesting use. If one takes only the birth rate over a period of years and finds that it has been continually increasing, he is very apt to conclude that the particular population in question is growing accordingly. This is not necessarily true. Further, if the birth rates of some of the countries are compared there is found that some of them present comparatively high rates while others are relatively low. Upon this knowledge one is apt to infer that the country with the highest birth rate is the country that is increasing its population the most rapidly. Again, this is not always true. Putting it another way, increasing birth rates are not necessarily synonymous with proportionately increasing populations. The reason is obvious—the populations showing the highest birth rates may be also manifesting the highest death rates (which incidentally is very often the case). Therefore the excess of births over deaths is the true measure of the natural growth of a population, and not the crude birth rate.

"The natural increase of a population may have some very important meanings. Certainly it is a good measure for comparative studies of populations. It is an index to the innate biological soundness of any population and insofar is it a very significant measure. For example, it might be very profitably employed in selecting immigrant races. What races are the fittest, biologically? By studying the natural increases of the different races one could safely say which ones showed the greatest survival value. This, however, would be under their own environments. But take the foreign stock of this country. How do their natural increases compare? There is a difference in them. It has been shown that some foreign stocks show remarkable adaptive qualities while others remain low in the scale of natural increase (unless amalgamation takes place). It is interesting to note in passing that the natural increase of the foreign stock in this country, taken as a whole, is greater than that of our own native stock. Is this an interesting and important fact to know? Again, through the births we can study the interesting phenomenon of differential fertility. Today, there is much interest being manifested in this phenomenon, especially in some of the European countries, notably England, and in this country to some extent. Those most absorbed in the problem are naturally the eugenists. But if we did not have data on births and deaths, would we be able to know whether or not the so-called upper classes are being gradually outnumbered by the more fertile inferior classes? Does this have an important bearing upon any of our social problems?"

THE SHEPPARD-TOWNER ACT AND ITS RELATION TO THE PHYSICIAN

LAURIE JEAN REID, R. N.,
Jacksonville, Fla.
Director, Bureau Child Welfare and Public Health Nursing.

Because the Sheppard-Towner Act has been so misinterpreted and misunderstood I wish to give a resumé of the Act before a discussion of it as it applies to the physician.

The Sheppard-Towner Act, which was passed by Congress on November 23, 1921, is an Act authorizing the appropriation of money from the United States Treasury to the several States, for the purpose of co-operating with them in promoting the welfare and hygiene of maternity and infancy and carrying with it the sum of $1,240,000.00.

Fifty thousand dollars is set aside for Federal administrative purposes and for the investigation of maternal and infant mortality. That the sum of five thousand dollars shall be given outright each year for five years to each State accepting the terms of the Act and that the balance of the appropriation be divided among the States accepting the terms of the Act, on the basis of population and granted, if matched by the State dollar for dollar.

The Children's Bureau was created by Act of Congress in 1912 and the "Investigation of Infant Mortality" headed the list of subjects to be undertaken by it. The need for the Sheppard-Towner Act was clearly shown by the findings from surveys conducted by the Children's Bureau in various parts of the country. These investigations were made by experts and the information compiled shows the conditions in communities such as cities, industrial communities, States having large rural areas, mining and coal districts, with foreign and native born, white and black population.

The high infant and maternal mortality rate; the toll of stillbirths, miscarriages and infant blindness, which shows the lack of instructive care of prospective mothers, or facilities for the proper care of these mothers before, during and after the prenatal and lying-in periods, found by these investigations were conclusive proof of the statement made by Dr. William Travis Howard, Jr., of Johns Hopkins Medical School, that "The prevention and control of illness and death of mother and child are among the most neglected and potentially the most fruitful domains of public health administration."

The idea of Federal assistance to States was not a new one. The Morrill Act of 1862, providing for land grant colleges; the Hatch Act of 1887, establishing agricultural experimental stations; the Smith-Lever Act of 1914, creating the agricultural extension service; the Good Roads Act of 1916, which was extended in 1919-21 and 1922, and the Smith-Towner Vocational Educational Act of 1917, all were giving Federal aid to States for some good purpose and were being successfully administered, and since the need for assistance on a National scale for the promotion of the health of mothers and babies was so apparent, it seemed only logical to resort to the same methods as had been employed for purposes not so important as the sav-

ing of human life, hence the Sheppard-Towner Act with its provision for State aid.

The Children's Bureau of the Department of Labor administers the Act under a Board of Maternal and Infant Hygiene which is made up of the Chief, Children's Bureau (who is executive officer of the Board), Surgeon General of the United States Public Health Service and the United States Commissoner of Education.

In order to secure the appropriations authorized by this Act a State must, through its legislative authority, accept the terms of the Act and designate the State agency, which shall have all necessary powers to co-operate with the Children's Bureau. In States having a Child Welfare or Child Hygiene Division in its State Department of Health, the administration of the Act shall be through such Division. The governor of any State may accept the terms of the Act until such time as legislature shall convene, when legislature must ratify the terms of the Act.

The most frequent objections to the use of this Federal money by States have been:

1. Federal interference in the planning and carrying out of State work.

2. The possibility of children being taken from their home for treatment or any other reason by employees working under this Act.

That these statements are incorrect can be clearly seen from the wording of the Act itself:

Except, Sec. 9, Page 4: "No official, agent, or representative of the Children's Bureau, by virtue of this Act have any right to enter any home over the objection of the owner thereof or to take charge of any child over the objection of the parents or either of them or of the persons standing in *loco parentis* or having custody of such child. Nothing in this Act shall be construed as limiting the power of a parent or guardian or person standing in *loco parentis* to determine what treatment or correction shall be provided for a child or the agency or agencies to be employed for such purpose."

Section 8, Page 4: "Any State, desiring to receive the benefits of this Act shall, by its agency described in Section 4, submit to the Children's Bureau detailed plans for carrying out the provisions of this Act within such State, which plans shall be subject to the approval of the Board. * * * If these plans shall be in conformity with the provisions of this Act and reasonably appropriate and adequate to carry out its purposes, they shall be approved by the Board and due notice of such approval shall be sent to the State agency by the Chief of the Children's Bureau."

Reports of activities and financial statements properly audited by the State Treasurer shall be forwarded to the Chief of the Children's Bureau on request.

Now, as regards the application of this Act in Florida. Governor Cary A. Hardee accepted the terms of the Act for the State in 1922, pending session of legislature.

State legislature convened in 1923 and by official act under Chapter 9186, Session laws of Florida, 1923, ratified and accepted the terms of the Sheppard-Towner Act in what was known as House Bill No. 637 and made provision in the appropriation for the State Board of Health for a sufficient amount of State funds to match the entire Federal appropriation. This means for Florida that $5,000.00 will be given the State each year for five years and that the sum of $11,531.72 will be set aside from the State appropriation for the State Board of Health to match a like amount from the Federal Sheppard-Towner fund. This increased appropriation will be available December 1st, the reason being that the State Board of Health appropriation is on a millage basis, derived from taxation, the returns from which will not be available for use until December 1st.

An erroneous idea which seems to have gained credence among some people that the Sheppard-Towner Act fosters birth control, has had a great deal to do with objections which were made to the passage of this Act. Nothing could be further from the intent of the Act, since every clause and provision is for the saving and protection of infant life and not for its destruction.

The criticism has been made that if this work was carried on in the State, it would mean constant interference with physicians' cases, but after one year and a half, there has yet to be the first complaint made from any physician in the State to this Bureau.

When the work was inaugurated in 1922, the plan was to cover the State as often as time and personnel would permit, by counties, systematically, with the following work: Supervision of midwives, educational work with mothers, baby health conferences where examination and advice would be given, and birth registration.

1. Previous to this time midwives had been working without supervision or instruction of any kind except in rare instances where some little instruction was given by health officers. The objective in the work with the midwives is the

elimination of those women practicing midwifery who have passed the point of acquiring proper methods through classes and a study of the "Manual of Instruction for Midwives"; the instruction and supervision of those who are teachable to the point where they will recognize their limitations and know what to do to safeguard the lives of the cases they handle. A simple equipment which they are obliged to carry will, if properly used, aid materially in preventing infection and the prohibition of the use of drugs will help to prevent some of the tragedies, of which we constantly learn in going about the State.

2. Realizing that we will never have lowered maternal and infant death rates until we can have mothers properly educated for motherhood, the work with mothers has been directed along the following lines:

The prenatal care of the prospective mother which includes instructions in simple English regarding diet, clothing, exercise, bathing, care of the breasts and the danger signals of pregnancy. Greatest stress is laid on the need for a physical examination by a competent physician as soon as the pregnancy is discovered, with return visits at intervals to insure proper care. This the mother is taught to do whether she is to be delivered by physician or midwife, and in many instances where the midwife has been employed previous to this instruction, women have employed physicians for delivery. The need for the monthly examination of urine with specific instructions regarding kidney complications, which would necessitate the immediate care of the physician, is also stressed. The proper preparation of a home for delivery is taught to groups of women in the home by the method of Neighborhood Institutes and also the preparation and home sterilization of the necessary supplies for mother and baby. The District Nurses from the Division of Maternal and Infant Hygiene, Bureau of Child Welfare, conduct these Institutes.

The care and feeding of the young infant is taught with emphasis on the care of the eyes, cord, and diet, the proper care of the mother's breasts and the methods to be employed to insure breast feeding. The methods of preparation of modified feedings is also taught with both fresh cow's milk and canned milk, both dry and condensed, so that people in the rural areas may know the proper preparation of whatever supply is obtainable. Mothers are taught the care of the well baby and instructed in the proper method of procedure should the baby become ill, reminding them that while neighborly advice may be given with the greatest kindness, that sick babies require a physician's care immediately if they are to be safely brought through the period of early infancy and that only where a physician's advice is not obtainable, is other advice to be taken.

3. Baby Health Conferences are held in counties and communities from which requests come and where sufficient interest is shown by those who could help put over the work. At these conferences, babies are weighed, measured and a physical examination made by a physician. The services of local physicians have been gratuitous for these examinations and the State Maternal and Infant Hygiene Nurses have, in each instance, remained in the district following the examinations for a sufficient length of time to make home follow-up visits of every case where defects were noted to advise the parents. Reports from these examinations have come to us from month to month from physicians telling us of cases that were still being brought from the rural districts to the towns for corrective care.

4. In order to assist the Bureau of Vital Statistics, which has not a field force, in the counties where birth registration was low, the Maternal and Infant Hygiene nurses have carried on this work as part of their regular activities, visiting the Local Registrars, calling on doctors and midwives and checking up, generally, on the birth registrations. Florida should be in the Birth Registration Area as well as parents being made to understand the value of birth registration to their children.

All this work, of necessity, cannot be continuously taught in any one community because of lack of personnel, but the reports from one end of the State to the other, with very few exceptions, show the unqualified approval of the medical profession and of the general public where the work under the Sheppard-Towner Act is being carried on. When we will have reached the far edges of the rural districts with instructive care for mothers for both themselves and their babies, and have convinced the general public that health pays and that proper care for mothers during the prenatal, natal and lying-in, and postnatal periods by competent physicians, who realize the value of proper obstetrics, is a community and world asset, we will have gone far in the elimination of the untrained midwife and the lowering of the maternal and infant death rates.

The Journal of the Florida Medical Association

Owned and published by the Florida Medical Association.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of Congress of October 3, 1917; authorized October 16, 1918.

Published monthly at St. Augustine and Jacksonville. Price $3.00 per year; 30 cents per single number.

Contributions for publication in this journal, whether scientific papers or reports of County Secretaries, should be typewritten.

Address Journal of the Florida Medical Association, St. Augustine, Florida, or 201-202 St. James Building, Jacksonville, Fla.

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FLORIDA AND PUBLIC HEALTH

With this issue of THE JOURNAL we present to our readers a series of articles pertaining to the immense problem of "Public Health."

There was a time when the medical profession was all alone in its efforts to combat disease and prolong the span of human life. It is most gratifying that this condition of affairs is fast disappearing and the profession is enlisting an army of laymen anxious and eager to serve in the ranks. The campaign against preventable disease and for the prolongation of life is well under way. Members of the medical profession are specializing in the study of Public Health work, legislative bodies of nation, State, county and municipality are enacting laws for the betterment of health conditions, civic organizations of various types are interesting themselves when called upon to carry on propaganda, and the whole mass of the people will now give an ear to such propaganda where a few years ago little if any attention was paid to the activities of those interested in this work.

It is doubtful if any State in our Union can profit to the same extent as can Florida with her Public Health problems well under control. At one time seriously handicapped with a high mortality and morbidity rate from such diseases as the typhoid and malarial fevers, a high morbidity rate from hookworm—resulting in a lowered vitality of pronouncement, the fear of possible outbreaks of yellow fever, she now emerges from this serious state to be recognized as one of the healthiest portions of the United States.

The State has no fear of an epidemic of yellow fever, our typhoid rate is a minimum one, hookworm is well under control, and our malarial rate is steadily on the decline. There is still work to be done, no section of the country can afford to lag in its public-health work, but with the continued efforts of our State Board of Health and those of our municipal health authorities, there is little doubt that the commercial activities of the State will in no wise be hampered by improper health conditions.

DR. JOSEPH Y. PORTER,

Health Officer of Florida, 1889-1917.

Dr. Porter was selected by the first Board of Health of Florida, appointed by the Governor, to be its secretary and State Health Officer early in 1889. The Board of Health was created by

an act of an extra session of the legislature called for the purpose by the recently elected and inaugurated Governor, Hon. Francis P. Fleming, whose foresight and vision realized the necessity of an agency to conserve the health and lives of the citizens of the State.

The members of the Board of Health are appointed for a term of four years and every succeeding board, for twenty-eight years, wisely selected Dr. Porter as State Health Officer. During this period of service no serious epidemic menaced the health of the people of Florida. He placed the health department of the State on a high plane in that it received the admiration and commendation of not only other State organizations of like character, but of the National Association and the U. S. Public Health Service. He established under his direction the laboratory service throughout the State, a benefit of no meager proportion. He inaugurated a system of district health officers and visiting nurses; established a Bureau of Vital Statistics and placed before the people of the State *Health News*, of all the activities of the Health Department in printed form. He conducted educational instruction to the people of the State through the agency of a health train, visiting every portion of the State with his corps of assistants and instructors and spreading the gospel of "Health" to every community.

Aside from his duties as Health Officer he was, because of his qualifications as a sanitarian and executive, appointed by the Surgeon General of the U. S. Public Health Service as quarantine inspector of the ports of this State, the only office of the kind in this country. This position he held with conspicuous ability for a long term of years. He has long been an ardent advocate of State Medicine and is a past-president of the Florida Medical Society.

FEDERAL MATERNITY AND INFANCY ACT

One million six hundred eighty-eight thousand forty-seven dollars and twelve cents has been expended by Federal and State governments to promote the welfare of mothers and babies under the Federal Maternity and Infancy Act during the first fifteen months following its passage.

This statement is made public today by the Children's Bureau of the United States Department of Labor, in connection with the forthcoming first official report of the administration of the Maternity and Infancy Act, passed by Congress on November 21, 1921. The report covers the period from March 20, 1922, when the first National appropriations became available, until June 30, 1923, and was prepared by Dr. Anna E. Rude of San Francisco, former director of the maternity and infant hygiene division of the Children's Bureau.

Federal grants to the States during this period for maternity and infancy work totaled $1,046,523.56. State appropriations made to match Federal funds totaled $641,523.56. In 1922 payments were made to 43 States, 28 of which matched the Federal grant in full or in part. In 1923, 41 States received grants for maternity and infancy work, 35 of which matched the allotment in full or in part. By June 30, 1923, all State legislatures had met and the appropriation acts passed enabled 40 States to co-operate during 1924, all but Kansas, Illinois, Louisiana, Vermont, Maine, Massachusetts, Connecticut and Rhode Island. By action of its State legislature in July, Louisiana for the first time accepted the Act and will receive its share of 1925 Federal funds.

National administration of the Maternity and Infancy Act is vested in the Children's Bureau and has been carried out, states the report, by the bureau's division of maternity and infant hygiene, the staff of which has consisted of six people—a medical director, associate director, a public health nurse, an accountant, a secretary, and a stenographer. Plans for State work are initiated and carried out by a State agency, usually the child-welfare or child-hygiene division of the State Board of Health, and approved by the Federal Board of Maternity and Infant Hygiene.

The Maternity and Infancy Act has already demonstrated its value, according to the report, in that it has:

"(1) Stimulated State activities in maternal and infant hygiene.

"(2) Maintained the principle of local initiative and responsibility.

"(3) Improved the quality of the work being done for mothers and babies by disseminating through a central source—the Federal Government—the results of scientific research and methods of work which have been found to operate successfully.

"(4) Increased State appropriations with the passage of the act. From the appropriation for the fiscal year 1922, 15 States were able to accept only the $5,000 unmatched funds. Six States

were able to accept only the $5,000 unmatched from the Federal appropriation for the fiscal year 1923. All of the States co-operating under the act either have already accepted more than the $5,000 unmatched allotment from the 1924 Federal appropriation, or will be able to do so. Moreover since the Maternity and Infancy Act became effective, 33 States accepting it have made definite increases in their own appropriations for the welfare of mothers and babies."

State activities under the Act have included the employment of physicians, public health nurses, dentists, dieticians, health teachers and social workers, on staffs of health departments; education of the public through lectures, demonstration, exhibits, films, etc.; maternity consultations or centers; mothers' classes, correspondence courses and other forms of educational work for mothers; training and supervision of midwives; health conferences; dental clinics; nutrition classes; inspection of maternity and children's homes. Much of the work has been directed toward taken to the rural mother and baby the health facilities which the city mother has had for some time.

Cancer Department

"In the early treatment of cancer lies the hope of cure."

AMERICAN SOCIETY FOR THE CONTROL OF CANCER

HOW TO ATTRACT A LARGE AUDIENCE FOR A PUBLIC MEETING ON CANCER CONTROL

Our Society has provided printed lectures and outlines of lectures to be delivered at the public meetings which it has advocated in connection with cancer week activities, but it has hitherto left the actual details of arranging for these meetings to the local committees under whose immediate auspices these gatherings are held.

From time to time, the question has been asked how meetings intended for the instruction of the general public as to cancer control can be made to attract the largest audiences. In order to meet such inquiries, the following suggestions are made:

1. *Auspices.* It is considered best to hold the meeting under the auspices of some existing organization whose membership is liberal enough to attract people in all walks of life, and whose scope is sufficiently broad not to prevent other groups or individuals from attending.

The most appropriate auspices under which to hold a meeting are those of the local branch of the American Society for the Control of Cancer, if there is one. If there is no such branch, a temporary committee can be formed under the authority of the Society's local or State representative. Who this person is can be ascertained by addressing an inquiry to the Society, at 370 Seventh Avenue, New York.

In some cases, it is desirable to hold a meeting under the joint auspices of the Society and an already existing organization, such as, for example, the Federated Women's Clubs.

It will occasionally be best to hold the meeting under the auspices of some organization not affiliated with the Society.

The principal idea involved is to secure the largest audience practicable, and to make the instruction given as authoritative and helpful as can be. People must come because they want to. And they must not only come, but persuade their friends and relatives to do likewise. When held under the auspices of some already existing organization, a nucleus of interest, and a machinery for extending this interest, will be utilized.

2. *Place of Meeting.* A public hall should be used. It must be a place which any resident of the community will feel free to enter. This is an exceedingly important point, for it is to be remembered that the educational activities against cancer must reach all of the people, as far as this result can be accomplished. On account of denominational differences, it is inadvisable to use a church for this purpose. A high school auditorium is an appropriate place, if it is big enough.

3. *Advertising the Meeting.* Notices should appear in the local papers; announcements should be made at meetings of all local organizations and sent to all associations, clubs, etc., through the mail.

The nurses' associations should be remembered. Do not forget the men. Be certain that the announcement is made at the meetings of the business men's organizations, such as the Rotary, Kiwanis, and Lions Clubs, and at meetings of

labor unions. Above all, notice of the forthcoming meeting on cancer control should be given from the pulpits of all churches.

Be certain that the announcement, whether in the press, from the pulpit, or elsewhere, is given in a short and concise form. If editors, clergymen, or others wish to dilate on the facts which you have given them, they are at liberty to do so; but the information which is sent out should not take more time to read than is absolutely essential.

Be careful to indicate that the meeting is free and that every one is welcome.

4. *Arrangements for the Meeting.* The meeting should be entirely informal and everyone made to feel at home. There should be no reserved seats. The policy should be, first come, first choice of seats. There may be some instrumental and vocal numbers, an entire band or orchestra if possible. For the vocal numbers, besides the numbers rendered by individuals, it may be possible to have a few numbers rendered by a chorus—perhaps a municipal chorus—or the choir of a local church.

5. *The Speakers.* There should be more than one speaker. There should be a principal one whose talk should be not less than thirty minutes nor more than an hour in length; preferably three-quarters of an hour. It must be borne in mind that people attending the meeting have come for an evening of instruction. They have possibly refused another invitation, and, if the principal speaker does not talk for a sufficiently long period of time and present helpful facts in an interesting way, the audience leaves disappointed.

There is no great difficulty connected with a good, concise talk on cancer that lasts an hour. It must be snappy and to the point throughout and in the language of the people, but in no wise slangy or trifling. Statistics are boresome and references to the late war inadvisable.

The painful, fatal side of cancer should not be stressed. It is the hopeful aspect of cancer, when put under competent medical treatment at an early enough stage to permit of cure, which should be emphasized.

It is not desirable that the principal address be read, but rather that it should be delivered without notes. A full lecture which may be read to a popular audience has been prepared by an eminent surgeon and can be obtained from the American Society for the Control of Cancer, if needed, as can a syllabus which may be used as a general guide for remarks which will be instructive and interesting.

Whereas the principal speaker will deliver the address of the evening, the other speakers should not give their talks in a perfunctory manner. They should take their cues from the principal speaker and support him. They should speak for from ten to fifteen minutes each. The speakers may include a city official, preferably the mayor, a prominent clergyman, a representative woman, a representative business man, a representative of the labor unions, and last, but by no means least, a representative of the local press. Good meetings have been held with only two speakers —one to make the opening remarks and the other to give the principal address.

6. *After the Meeting.* By all means, an account of the meeting should be given afterward on the front page of the local papers. While the meeting may have been well attended and the hall packed, one should not be content with this result if a still better one can be obtained. Many residents of the place will not be present at the meeting. Further, inasmuch as the newspapers go beyond the limits of the local community, many persons outside of it should, through this medium, be given an opportunity to learn the facts brought out at the meeting. News articles can often be written in advance of the occasions which they describe, to the great convenience of the editors.

COMMUNITY ORAL HYGIENE

Latest in the series of public health studies to be issued by the New York Association for Improving the Condition of the Poor is "Community Oral Hygiene," being a four-year report of a demonstration which the A. I. C. P. has been conducting in the Mulberry district of New York City. In a foreword to the report, Bailey B. Burritt, General Director of the Association, says:

"Communities are only beginning to awaken to their responsibility of providing a complete preventive dental program for school children. New York City, in common with most communities, has lagged behind Bridgeport, Boston and Rochester in providing an extensive dental service for school children. In order to promote this important work the A. I. C. P. has undertaken

an experiment in an oral hygiene program for the children in the Mulberry district in the hope that the results of this experiment might lead New York City and other communities to provide an adequate dental service for school children on a permanent basis."

The report, which was prepared by J. C. Gebhart, Director of the A. I. C. P.'s Department of Social Welfare, points out that it was agreed at the outset that such a demonstration would be most significant if it were confined to children, particularly those of the younger ages, and if the emphasis were placed upon educational and prophylactic work. In general, the policy has been to adopt those features of the work in Bridgeport and Rochester which were suited to the situation in the Mulberry district.

The following steps, arranged in the order of their relative importance, were deemed essential to the program:

1. Prophylactic cleanings at least once a year, and twice a year if possible, for all children in the first five grades of school.

2. Extraction of unsavable and diseased teeth, to put the mouth in a hygienic condition.

3. Prophylactic fillings (to prevent decay) in all first permanent molars and reparative fillings where needed in first molars.

4. Nitrate of silver treatment to arrest decay in deciduous teeth which are retained longest.

The fourth point, that of providing nitrate of silver treatment for temporary teeth, was added later after experience had clearly demonstrated that the treatment of the decayed surfaces of such teeth with nitrate of silver was sufficient to arrest decay and to enable the children to retain them for the proper length of time without imposing the unwarranted expense of placing permanent fillings in teeth about to be shed. While the procedure outlined above was drawn up primarily for school children it has been followed also in the work with children of preschool age.

The work was first begun October 1, 1919, in one of the public schools of the district with a full-time dental hygienist installed in the kindergarten room. In January following, a dentist was secured on half-time. By June, 1920, this work had developed to such a point that a well-trained dentist with broad vision and executive ability was needed to develop the work along sound lines and to keep the staff inspired in their task. Besides the supervisor the staff now consists of two full-time dentists and two half-time dental hygienists.

The plan has been to concentrate efforts in the schools where no work has been done and where work may go on from year to year without interruption. In this way there was definite assurance that the work was being done where it was most needed and where the continuity of the service would enable the A. I. C. P. to secure tangible results.

An extension of the service to pregnant women was begun in February, 1922. The purpose of the experiment was to select a limited number of pregnant mothers, preferably those who were experiencing their first pregnancy, for intensive dental care and instruction in diet and oral hygiene. In this way it was hoped that the mothers would be encouraged to begin early in training their children in the care of the mouth.

The actual improvement in mouth conditions is best shown in the annual survey made by the A. I. C. P.'s supervisor for the purpose of determining in advance the amount of work needed during the year. The children are classified as to those needing extractions and fillings of various kinds and those who need no reparative work. Since the survey is not made at exactly the same date each year, obviously this picture is not altogether reliable; for if the survey is made quite early in the school year, before much work has been undertaken, a much less favorable picture is given than if made later, after many of the worst conditions have been cleared up. In spite of these variations, however, the annual classification of the children shows a steady improvement.

The A. I. C. P. has now made four annual surveys of the mouth conditions of the children of Public School 106, where the most intensive campaign has been conducted. The increase in those needing no corrective dental work and in those awarded diplomas for having kept their mouth clean has steadily increased. There has also been a marked reduction (from 85.4 per cent to 46.4 per cent) in children requiring fillings, for the most part in first permanent molars. While the proportion needing fillings is slightly greater than last year, the proportion needing extractions has been reduced from 40.3 per cent to 32 per cent. This is again a most encouraging sign, for it means that more children have savable teeth than last year, and for such, fillings rather than extractions are indicated. There is also direct evidence that the fillings required are of a far less extensive nature than when the work first began, for in 1920 60 per cent of the

fillings were urgent, while in 1923 only 37 per cent were urgent.

While approximately 3,000 children have been served annually through the dental clinics, approximately 1,200 of this number received intensive care, including extractions, fillings and nitrate of silver treatment. Obviously, the per capita costs for these 1,200 will be much higher than the per capita cost of the total 3,000 served. The practice has been to divide the total annual expenditures by the total children reached to secure the gross per capita cost. Thus, for the first year that complete records were available the gross per capita cost was $4.17. This item, however, included several expenditures for equipment and educational literature. By the following year the per capita cost had been reduced to $3.79.

The reduction in cost is due both to an actual decrease in the amount of corrective work to be done and also to the fact that a larger number of children were reached through the prophylactic service, where the cost is less. During the last year the per capita cost had increased to $3.99. This increase is due in part to extending the service to preschool children, which at first involved considerable loss of time because of unkept appointments. It seems reasonable to conclude that a dental service of this kind costs approximately $4.00 per child reached. The A. I. C. P. also presents in its report the approximate average cost of particular operations, prophylactic cleanings, fillings, extractions and nitrate of silver treatments.

There are, indeed, few health services, the report points out, which for an average annual per capita expenditure of $4.00 can show such unequivocal and far-reaching results as those accomplished by this demonstration. The full implications of these results will not be fully realized until oral hygiene is accorded its proper place in preventive medicine. The increase in clean, healthy mouths, the saving of first permanent molars and the reduction in the incidence of dental caries have proceeded during these four years at a rate little dreamed of when the work was begun.

The demonstration has proved that a dental service which is administered as an integral part of the daily school program produces the most widespread and lasting results. Experience has shown that when the dental clinic is in the school building children can be sent directly from the class-room to the dental clinic with a minimum of waste time both for pupil and operator and with a minimum amount of confusion and disruption of class-room work. The hearty support and co-operation of the school officials in promoting the educational aspects of the dental program could hardly have been secured if the dental clinic were not in the school building.

BIOLOGICAL PRODUCTS THAT MAY BE OBTAINED FROM THE STATE BOARD OF HEALTH

In spite of the fact that the State Health Officer has sent letters to all physicians in the State, that he has published this in *Health Notes* (May, 1922), that we have called attention at medical meetings and that the press has carried the word, still a great many of the members of the profession do not realize just what may be obtained for the protection of their patients.

The State Board of Health furnishes diphtheria antitoxin in 5,000 and 10,000 unit packages for *therapeutic use;* tetanus antitoxin, 1,500 units for prophylactic, and 10,000 and 20,000 unit packages for therapeutic use; vaccine virus for the protection against smallpox, triple typhoid vaccine, anti-meningococcus serum, Schick tests to determine who is susceptible to diphtheria and toxin antitoxin to immunize against diphtheria. All these are furnished without cost to use for any case.

One question frequently is asked and that is why should the State furnish antitoxin to those who can afford to pay for it? The answer is simple when once it is carefully considered.

The State Board of Health is supported by a tax paid by the citizens of the State. "Those who can pay" are certainly included as taxpayers and the State Board of Health, on account of the volume of material required, is able to obtain the biologics at much less than half the regular retail price of many of the products.

By furnishing the above biological products the State Board of Health saves the citizens of the State the difference between the cost to the State Board of Health and the retail price which last year alone meant a saving of over $8,000.

The above mentioned products are used in every section of the State, hence the saving is distributed over the State as are the taxes.

There is one other biological product handled by the Board, namely, antirabic treatments, but these are not furnished free except when the

physician administering it certifies that the patient is indigent and that he is receiving no pay for the administration. The question sometimes arises, why should the Board of Health furnish some biological products free and charge for another? and that is a fair question. The answer is that any community can practically control the rabies situation, hence why should those sections not having rabies be taxed for the treatments given to those places that allow the disease to exist. As an illustration of the above I have made a summary of the number of treatments sent to Hillsborough County, Duval County, and the 14 counties west of Jefferson County for the years 1921, 1922, 1923 and the first six months of 1924:

	Hillsborough County.	*Duval County.*
1921	114	7
1922	91	8
1923	109	50
Jan.-June 30, 1924	28	80
	342	145

	14 Counties west of Jefferson County.	*Gadsden County.*
1921	10	8
1922	38	20
1923	20	5
Jan.-June 30, 1924	10	3
	78	36

In 1921 Hillsborough County was beginning to realize that they had a problem on their hands, but the result of repressive measures did not become manifest until 1924 when they apparently had obtained a real reduction in the number of cases requiring treatment.

The other extreme is shown by the figures from Duval County. After an abnormal number of cases had occurred prior to 1915 an active campaign was carried on for some years to limit the number of cases with gratifying results, but with the reduction of the number of cases public sentiment as to the necessity for continued care became less and the inevitable increase occurred. We hope the peak has been reached and that the active co-operation of the citizens may be secured and maintained and that our children may not be so frequently exposed to this menace; yes, if it will reach those that will not guard the children, that the dogs themselves will not be exposed to the disease, for just as smallpox only follows exposure to a case of smallpox, rabies only follows exposure to a case of rabies.

It will be noted that of the 78 treatments used in the 14 counties west of Jefferson county 36 of them were used in Gadsden county, leaving but 42 for the other 13 counties during the three and one-half years under consideration.

Rabies has always been an easy disease to control if people try to do so and now there is added a method whereby dogs can be rendered immune by a single injection of virus, this immunity lasting for at least a year.

In order that diphtheria antitoxin may be easily and quickly obtained in all parts of the State certain drug stores centrally located have been designated as antitoxin stations and at these stations diphtheria antitoxin and typhoid vaccine can be secured. *No other biologics are kept by the State Board of Health at these stations.*

Any of the biologics may be secured from the branch laboratories except the antirabic treatments, but any large amount should be requested from the laboratory at Jacksonville, which is the distributing point to the branches and stations. All requests for any of the biologics should be addressed to the laboratory for it is open Sundays and holidays for at least a half day and our mail is opened, while if the request is directed to the State Board of Health it would not reach us until the following day.

We ship biologics by the first mail after receipt of request and desire to give you the most prompt service possible.

Please be definite in your requests. For instance we sometimes receive a message like the following: "Please send vaccine at once." The sender of the message knows if he wants vaccine virus or typhoid vaccine, also if he needs 5 or 500, but we do not know the conditions and are under a great disadvantage. Another common message: "Send tetanus antitoxin." Does the sender wish a 1,500 prophylactic dose or has he a case and needs 50 or 100,000 units?

When wiring or writing for anti-rabic treatments *always* state *age* of the patient and *location* of the bite or bites.

A list of stations is appended.

ANTITOXIN DISTRIBUTING STATIONS FOR THE FLORIDA STATE BOARD OF HEALTH

City.	*Station.*
Apalachicola	H. B. Robbins Drug Co.
Arcadia	Arcadia Drug Co.
Avon Park	Avon Park Drug Co.
Blountstown	Leonard Drug Co.

City.	*Station.*
Bradentown	Balis Pharmacy.
Century	Century Pharmacy
Chipley	Mitchell Drug Co.
Clearwater	Morris Drug Store.
Cocoa	Hughlett Drug Co.
Dade City	Griffin Drug Co.
Daytona	Hankins Drug Co.
DeFuniak Springs	Rexall Drug Store.
Fernandina	Horsey's Drug Store.
Fort Meade	Langford Drug Co.
Fort Myers	Pixon & Schultz Drug Co.
Fort Pierce	Silver Palace Drug Co.
Gainesville	J. S. Bodiford Drug Co.
Inverness	Inverness Drug Co.
Jacksonville	State Laboratory.
Key West	Key West Drug Co.
Lake Butler	Tomlinson Maines Drug Co.
Lake City	Columbia Pharmacy.
Lakeland	Henley's Drug Store.
Live Oak	Suwanee Drug Co.
Miami	State Laboratory.
Ocala	Court Pharmacy.
Okeechobee	Park Pharmacy.
Orlando	Evans Rex Drug Co.
Palatka	City Drug Store.
Panama City	Sims Drug Co.
Plant City	Knight's Drug Store.
Pensacola	State Laboratory.
Quincy	City Drug Store.
St. Augustine	St. George Pharmacy.
St. Petersburg	Bennett's Pharmacy.
Sanford	Mobley's Drug Store.
Starke	Mitchell Drug Co.
Stuart	Stuart Drug Co.
Tallahassee	State Laboratory.
Tampa	State Laboratory.
Wauchula	Beson Bros.
West Palm Beach	Speer's Pharmacy.
Winter Haven	S. H. Woods.

PUBLISHER'S NOTE

AN OLD FRIEND IN A NEW DRESS

The dosage of digitalis has always been a problem—for two reasons: Physiological and pharmaceutical. And these two are obviously interrelated, for unless a reliably uniform preparation of digitalis is available, how can there be uniformity of dosage, even though there may be agreement as to the physiologic effect aimed at?

The profession seems to be partial to the tincture, unless the case is one which demands hypodermic treatment; and of all the tinctures offered, the best is, undeniably, one that is made from select digitalis leaves, standardized by physiologic test, put up in small packages protected from light and air, and, of course, dated so that the physician can tell at a glance how old it is.

The reputation of Parke, Davis & Co. is such that what this house has to say about its Tincture No. 111, Digitalis, in our advertising pages, will be found well worthy of careful consideration. Further particulars, if desired, will do doubt be supplied by the manufacturers.

Dyrenforth Laboratory

CONSULTING AND ANALYTICAL CHEMISTS
TOXICOLIGISTS
L. Y. DYRENFORTH, B. Sc., Director

In addition to our analytical and investigational branches, we prepare solutions for the clinical laboratory according to Folin, Gradwohl, Hawk, etc. Our preparations are accurate and fresh.

Special test solutions for qualitative and quantitative work in urinalysis, blood chemistry, gastric analysis or other requirements.

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